

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Grant A. Johnson (Reg. No. 42,696) on October 26, 2009.
3. The application has been amended as follows:

In the Claims:

- 1-12. (Cancelled)
13. (Currently Amended) A computer-implemented method of communicating updates from a subject to an observer, comprising:
 - in an observer, creating an aspect object, the aspect object comprising logic adapted selectively communicate update information from a subject to the observer based on configuration information, the configuration information comprising an attribute of the observer;
 - attaching the aspect object to the subject;
 - notifying the aspect object of an update;

in the aspect object, interrogating the update to generate the update information; and

selectively communicating the update information to the observer based on a comparison between the update and the configuration information.

14. (Currently Amended) The computer-implemented method of claim 13, further comprising selectively modifying the update information based on a comparison between the update and the configuration information.

15. (Currently Amended) The computer-implemented method of claim 13, further comprising selectively accumulating the update information based on the configuration information.

16. (Currently Amended) The computer-implemented method of claim 13, further comprising sending updated configuration information from the observer to the aspect object, wherein the updated configuration information comprises an updated attribute of the observer.

17. (Currently Amended) The computer-implemented method of claim 16, wherein the updated attribute of the observer includes a system load indication.

18-22. (Cancelled)

23. (Currently Amended) A computer-implemented method of maintaining data consistency between a subject object on a first computer system and an observer object on a second computer system, comprising:

- 1) by an observer object, creating an aspect object, the aspect object comprising logic adapted selectively communicate update information from a subject object to the observer based on configuration information, the configuration information comprising a desired type indicator and a desired communication rate indicator;
- b) attaching the aspect object to the subject object; and

- c) in response to a state change indication from the subject object:
 - 1) sending an update to the aspect object;
 - 2) by the aspect object, interrogating the update to generate an update type indicator;
 - 3) by the aspect object, modifying the update based on a comparison between the update type indicator and the desired type indicator to produce a modified update;
 - 4) by the aspect object, sending the modified update to an accumulator;
 - 5) by the aspect object, using the desired communication rate indicator to determine whether the object is ready to receive the modified update; and
 - 6) communicating the modified update to the observer.
- 24. (Cancelled)
- 25. (Currently Amended) The computer-implemented method of claim 13, wherein subject comprises an object and wherein the observer comprises an object.
- 26. (Cancelled)
- 27. (Currently Amended) The computer-implemented method of claim 13, wherein the configuration information comprises a type of updates desired indication.
- 28. (Currently Amended) The computer-implemented method of claim 27, wherein the aspect object selectively discards the update information in response to the type of updates desired indication.
- 29. (Currently Amended) The computer-implemented method of claim 13, wherein the attribute of the observer includes a maximum desired communication rate indication.

30. (Currently Amended) The computer-implemented method of claim 29, further comprising an accumulating the update information if a required communication rate is greater than the maximum desired communication rate indication.
31. (Currently Amended) The computer-implemented method of claim 13, further comprising preprocessing the update to selectively modify the update information in response to the configuration information.
32. (Currently Amended) The computer-implemented method of claim 31, wherein the preprocessing comprises encapsulating the update with Internet routing information.
33. (Currently Amended) The computer-implemented method of claim 31, wherein the preprocessing comprises compressing the message.
34. (Currently Amended) The computer-implemented method of claim 31, wherein the preprocessing comprises encrypting the message.
35. (Currently Amended) The computer-implemented method of claim 31, wherein the preprocessing comprises calculating a related value.
36. (Currently Amended) The computer-implemented method of claim 13, further comprising, in the subject, providing a set of attach/detach methods that enable the observer to attach the aspect object to and detach the aspect object from the subject.

Response to Arguments

4. The Applicants' arguments presented in the Appeal Brief filed on July 27, 2009 have been fully considered and are persuasive.

Allowable Subject Matter

5. *Claims 13-17, 23, 25 and 27-36 are allowed. The claims indicated include limitations that the prior arts of record do not appear to teach or render obvious, hence they are allowed.*

6. The following is an examiner's statement of reasons for allowance:

As presented in the previous Office Action, Skinner et al. (US006721740B1) discloses, "FIG. 5A comprises root node 500, which is coupled to a Client A interest object, a Client B interest object and a Client C/Server X interest object. The Client C/Server X interest object refers to an interest object registered with root node 500 for a third client ("Client C") or another application server ("Server X"). The respective client or server, or a component acting on behalf of the client or server, is registered as an observer of the respective interest object. A group of interest objects 501 are registered under the Client A interest object; a group of interest objects 502 are registered under the Client B interest object, and a group of interest objects 503 are registered under the Client C/Server X interest object. Interest objects for components within the subject application server (i.e., the server containing the present server interest registry) may register with root node 500, and extend via sub-interests. However, interest objects for components of the subject application server are not shown in FIG. 5A for clarity" (Skinner, col.10, lines 47-65). Hence, Skinner teaches of interest objects (e.g., Client A interest object, Client B interest object) (i.e., Applicants' aspect object) are registered (i.e., Applicants' created) and coupled (i.e., Applicants' adapted for attachment) to root node 500 within the subject application server (i.e., Applicants' subject) by the user via the clients A and B, respectively.

Also presented in the previous Office Action, Shaw et al. (US006424989B1) discloses, *"An improved object-oriented transaction computing system for compilation, linkage, and management of a single or plurality of object, class, and/or method library through set-up, managing, and termination of corresponding procedural call modules, said computing system comprising: input means for interfacing with selective user, application, and/or network; object means for representing a selective one or plurality of subjects of interest for said user, application, and/or network ... said personalized database/storage means further establishing, organizing, accumulating and/or updating transaction regarding user, application and/or network's interest"* (Shaw, claim 6). Hence, Shaw teaches of the object means (i.e., Applicants' aspect object) representing subjects of interest (i.e., Applicants' subject) for the user, application, and/or network (i.e., Applicants' observer) and personalizing the updates (i.e., Applicants' selectively communicate update information) regarding the user, application and/or network's interest.

Also presented in the previous Office Action, Collins (US005963951A) discloses, *"The system 100 also collects personal information from the user. In the case of telephone access to the system, this information is obtained, for example, by asking the user to press various keys on the telephone keypad to indicate answers to questions asked through the VRU 122. In the case of access via the network 104, the user's information is entered using any known manner using a typical browser application. The personal information obtained can include, but is not limited to, the user's age, sex, the user's gender preference (including "couples"), the user's first name, race, hair color, build of body, and location including city and zip code. The system will also obtain from the user a goal which can be one of "romance," "friendship," "a walk on the wild side," and the*

like. The system 100 provides the user with a system phone number for a personal voice mail box; voice mail box number" (Collins, col.5, lines 37-48). Hence, Collins teaches of the system 100 (i.e., Applicants' subject) obtaining (i.e., Applicants' generate) personal information (i.e., Applicants' configuration information) that includes (i.e., Applicants' comprising) the age, sex, first name, race, hair color, etc (i.e., Applicants' attribute) of the user via the user interface (i.e., Applicants' observer).

However, the prior arts of record fail to teach or suggest individually or in combination as stated in the independent claims for "in an observer, creating an aspect object, the aspect object comprising logic adapted selectively communicate update information from a subject to the observer based on configuration information, the configuration information comprising an attribute of the observer; attaching the aspect object to the subject; notifying the aspect object of an update; in the aspect object, interrogating the update to generate to generate the update information; and selectively communicating the update information to the observer based on a comparison between the update and the configuration information" and in combination with other limitations as set forth in the independent claims, as well as Applicants' arguments presented on page of the Appeal Brief filed on July 27, 2009. In the fore mentioned amendment, the Applicants argued, *"In conventional subject-observer systems, each subject maintained a list of observers and, when the subject's state changed, notified each observer of its state change. This notification occurred regardless of the observer's particular interest or the observer's capacity to handle the update. The observers would then request the updated information, again regardless of observer's particular interest or the observer's capacity to handle the update. The subject's updates are then issued, only to be discarded by that observer. This drawback made conventional designs inflexible and inefficient,*

particularly in modern "distributed" systems because the remote messages are comparatively slow. The claimed inventions are directed at a better way to implement the subject-observer paradigm - one that overcomes these drawbacks by introducing observer created and controlled aspect objects into a subject/observer implementation. In operation, each observer creates one or more aspect objects (i.e., both data and the procedures to manipulate that data) and then issues instructions to attach the aspect object(s) to the subject. These aspect objects, in turn, provide the observer with virtually unlimited flexibility to specify what specific type of information it wants, in what form the information it wants that information sent, and how frequently it wants the information to be sent" (Appeal Brief, pg.13-14) and "Unlike the present invention, the interest criteria in Skinner is limited to assembling conditions on the attributes of the data object. As such, it fails to teach any method for an observer to implement and register criteria based on the attributes of the observer, see Office Action mailed July 18, 2006 at pg. 5, much less the claimed observer-created and controlled aspect objects. In the claimed inventions, in contrast, each observer creates one or more aspect objects (i.e., both data and the procedures to manipulate that data) and then issues instructions to attach the aspect object(s) to the subject. These observer-created and controlled aspect objects, in turn, provide the observer with virtually unlimited flexibility to specify what specific type of information it wants, in what form the information it wants that information sent, and how frequently it wants the information to be sent" (Appeal Brief, pg.15).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Duong whose telephone number is 571/272-3911. The examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571/272-7304. The fax phone numbers for the organization where this application or proceeding is assigned are 571/273-8300 for regular communications and 571/273-8300 for After Final communications.

/Thomas Duong/

Patent Examiner, Art Unit 2445

November 17, 2009

/VIVEK SRIVASTAVA/

Supervisory Patent Examiner, Art Unit 2445